FISHERIES
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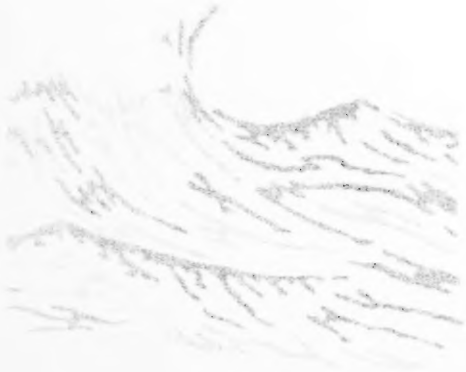
COUNCIL

2004/2005 Conservation Requirements for Groundfish Stocks on the Scotian Shelf and in the Bay of Fundy (4VWX5YZ)

Report to the Minister
of Fisheries and Oceans



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LETTER TO THE MINISTER

February 13, 2004

The Honourable Geoff Regan, P.C., M.P.
Minister of Fisheries and Oceans
200 Kent Street
Ottawa, ON K1A 0E6

Dear Minister,

As part of its ongoing mandate, the Fisheries Resource Conservation Council (FRCC) presents its report on 2004/2005 Conservation Requirements for Groundfish on the Scotian Shelf and in the Bay of Fundy (4VWX5YZ). Our recommendations are based on information provided by DFO Science, stakeholder briefs submitted to the Council and comments and presentations offered at formal consultations.

In January 2004, stakeholders were invited to comment on all Scotian Shelf and Bay of Fundy groundfish stocks at consultations held in Yarmouth, Dartmouth and Sydney, Nova Scotia. The Council has chosen to report on those stocks that DFO Science had prepared SSRs, and for which information was provided at consultations. The report also contains advice and recommendations for species discussed at consultations and for which Expert Opinions were provided by DFO Science. These recommendations are either summarized in the Introduction section of the report and/or as a brief species overview within the report.

There was no new scientific evidence nor substantial quantifiable comments at stakeholder consultations on the following stocks: cod 4VsW, pollock 4VWX5Zc, argentine 4VWX, skates 4VsW, wolffish 4VWX5YZc, white hake 4VW, white hake 4X5Y, monkfish 4VWX and cusk 4VWX . The Council has therefore no basis to change its recommendation made last year and is not providing specific comments for these stocks.

Since the Council will not be providing new conservation advice on the Unit 3 redfish fishery, it notes the concerns expressed by industry regarding the apparent lack of large redfish available to the fishery. Although the Council maintains its 2003/2004 recommendations regarding this stock, Science may want to further investigate the views put forward by industry.

The Council remains concerned with the lack of rebuilding of certain stocks. While recognizing that the causes may not all be related to fishing, the Council wants once more to emphasize the need for additional enforcement measures and self-discipline by participating stakeholders.

Sincerely,

Jean Guy d'Entremont

Jean Guy d'Entremont,
Chairman

Chapter 1: Introduction

The introduction section of this report includes general comments and recommendations pertaining to a number of species and issues.

The Council would like to note that many of these items are pertinent to other areas of Atlantic Canada. In its report last year, the Council gave prominence to the potential long-term impact of mis-reporting and discarding on the Scotian Shelf. The Council has opted to address this issue again this year in both the introduction and under several species in the body of the report.

Surveillance and Control:

In recent years, the Council has heard, at many of its consultations, expressions of concern from industry about DFO's lack of ability to effectively enforce conservation and management measures. The Council is pleased to observe that DFO and the industry have begun to address the concerns and added several tools to assist in curtailing mis-reporting and cheating. It is essential that DFO continue to improve its ability to effectively monitor the Atlantic fisheries.

The Council recognizes that at least part of the solution must be to create a self-policing system within industry and involve stakeholders to a much greater extent than has been done in the past. The experience of other industries and of fisheries in other jurisdictions might be instructive in this regard.

The FRCC reiterates its recommendation that DFO designate personnel who would be charged with the authority and responsibility to work with industry groups 'on the ground' to develop new and innovative approaches to create effective self-policing systems that can be integrated with Conservation and Protection.

DFO alone cannot effectively enforce conservation and management measures without the assistance of a responsible fishing industry.

The FRCC continues to urge the fishing industry to operate their fishing operations in a responsible manner to avoid wasteful harvesting practices.

Industry has indicated its support for reinstating the administrative sanctions as a deterrent to the continued violation of fisheries conservation and management measures. The small fines provided by the judicial system, for infractions of fishing regulations, are often viewed as a cost of doing business.

The imbalance between the harm done when regulations are violated and the punishment imposed for such infractions is not unique to 4X, or to the Scotian Shelf and Bay of Fundy area. The Council has heard that while this type of activity has been relatively limited, the lack of detection and effective punishment of abusers is creating an incentive for others to cheat. Improper and illegal fishing also negatively affects the quality of stock assessments, the trust in fisheries science, and the integrity of the TAC and quota management system.

The Atlantic Fisheries Policy Review recently cited changes to the Fisheries Act as an important first step towards sustainable fisheries management.

The FRCC recommends that DFO work to reinstate a form of administrative sanctions and work with industry to encourage the courts to strengthen the fines that are being imposed when fishing regulations are violated.

Mixed Cod and Haddock Fisheries:

During public consultations harvesters from both fixed and mobile gear sectors indicated significant progress in directing for 4X haddock with minimal cod by-catch in what was previously predominantly a mixed cod and haddock fishery. The FRCC commends the efforts made by industry to conduct a more conservation oriented haddock fishery and encourages continued innovation in the harvesting of this resource. The Council recognizes that harvesting of the recommended 10,000t haddock TAC is limited by the available allocations of cod in the area and harvesters will continue to be challenged to avoid high by-catches in a mixed fishery.

Based on recent fishery data for 4X cod the SSR indicates that there are areas and seasons where both hook and line and mobile gear can harvest haddock with minimal by-catch of cod. In addition, there are seasonal periods when the ratio of haddock to cod can result in conserving cod. Given the increasing fishable biomass for haddock and the lack of rebuilding for cod, more effort is required by harvesters and DFO management to ensure that the haddock fishery is targeted to specific areas and times where cod by-catch is minimized. The Council feels that it is possible to achieve an improved balance in the mix of species caught by various gear sectors in the fishery. **The FRCC urges the industry and DFO to institute a more conserva-**

tion-oriented Conservation Harvest Plans (CHP) for the 2004/2005 fishery. Such a CHP should include the utilization of best practices that encourage the harvesting to take place in space and time that will promote the rebuilding of cod.

Multi-species mixed fisheries pose demanding pressures on fisheries management systems and this is particularly evident in the Western Scotian Shelf fishery. This type of fishery, where it is common to catch over a dozen species in a single fishing trip, requires adequate, timely and responsive monitoring. Adequate fisheries monitoring is essential, to providing reliable estimates of removals by fishing. The FRCC urges the fishing industry to work with DFO to ensure that management measures are in place to achieve the objectives of the management plan. As indicated in the SSR the 4X cod assessment is compromised due to the inability of the fishery to provide reliable catch estimates. The FRCC believes this situation must be addressed in order to responsibly manage the fisheries in the area. DFO will have to be diligent in enforcement and protection to ensure compliance.

The FRCC recommends that DFO improve monitoring of the mixed fishery with the objective to ensure reliable estimates of removals for all species harvested in the fishery.

Scotian Shelf Ecosystem

The Council is increasingly concerned with the situation on the Scotian Shelf and more so on the Eastern Scotian Shelf. With the exception of haddock, none of the groundfish stocks in this area show significant signs of recovery since the moratorium on directed fishing for many stocks. The cod stock has continued to decline even after a decade with almost no fishing mortality. Most of the groundfish show poor somatic growth rates and high natural mortality, even haddock, whose biomass has been increasing. There are indications that groundfish stocks elsewhere on the Scotian Shelf are also showing signs of poor growth rates and increasing natural mortality.

Colder water, present from the mid-1980s through the 1990s, may have had some effect on limiting productivity, however, temperatures have increased and it should no longer have a negative effect on traditional species. There may also have been changes in food supply, changes in relative abundance of competitors and changes in food web structure possibly leading to growth limitation and increasing natural mortality. Recently, there has also been speculation that seismic testing has disrupted spawning and caused some mortality of larvae and juvenile fish. The inability to relate the poor recovery of groundfish to other changes in the marine food web or to oceanographic conditions points to the need for science programs to improve the understanding of ecosystem dynamics in this region.

Predation by seals has been repeatedly identified as a source of mortality given the substantial increases in grey seal numbers over the past few decades. The FRCC has echoed these concerns for many years. During consultations this year, as in earlier years, the FRCC heard that the increase in the seal population is a cause for the poor state of the groundfish. The Council applauds the recently funded Atlantic seal research program as a step towards increasing our understanding of their role in this marine ecosystem and their importance as fish predators.

The FRCC supports recent proposals to develop a limited harvest of grey seals. A sustainable hunt could limit further growth of the population, or perhaps lead to some reduction in the numbers, thereby limiting or reducing the predation impact on fish by grey seals.

The Species at Risk Act and Fisheries Interactions

At this year's round of consultations in Nova Scotia, DFO presented stock status reports on two stocks from the Scotian Shelf that will be impacted by the implementation of the Species at Risk Act (SARA); the Atlantic striped wolffish (also referred to as catfish) which is designated as "special concern" under SARA and cusk which COSEWIC has recommended that Government list as threatened. Fishermen and the fishing industry are apprehensive of the negative impact this could have on the conduct of commercial fisheries. The Council also believes that listing of these two species could have serious impact on the conduct of commercial fisheries given that both are caught as by-catch in a number of fisheries. Cusk is a by-catch for groundfish long-line, groundfish otter trawls and for the inshore/offshore lobster fishery. Atlantic striped wolffish is a by-catch of those fisheries also, but to a lesser extent for lobster. DFO should consult with stakeholders over the coming months to determine the best way to deal with these species in the context of SARA. Industry expressed a keen interest in working cooperatively with DFO throughout this process.

The FRCC recommends that DFO consult with the fishing industry to determine how the industry and DFO can be proactive in the SARA process.

Expert Opinions:

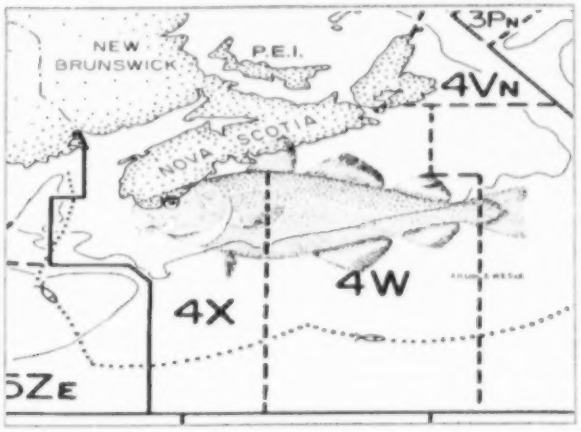
The Expert Opinions (EOs) process was introduced by the Maritime Science Sector as an internal departmental review process to provide updated advice on stock status. During recent consultations, stakeholders expressed their dissatisfaction with the process and brought forward several specific complaints about the content of the opinions. It is industry's and Council's view that input by industry would have improved the content and quality of the reports.

The Council is also of the view that the Stock Status Updates used in the past appropriately provided empirical data to support the advice on the stocks. The EOs on the other hand, provided little results on surveys or supporting analysis.

The FRCC recommends that DFO science reinstitute the process of providing stock status updates.

Chapter 2: Stock-by-Stock Recommendations

COD - 4X5Y



PERSPECTIVE

Juvenile cod in 4X5Y feed on a wide variety of invertebrates and as they grow, they include fish in their diet. Cod in 4X5Y reach 53cm on average by age 3, 72cm by age 5 and 110cm by age 10. First reproduction generally occurs at age 3 and individual females tend to spawn several batches of eggs during a single spawning period. The fecundity of females at first maturity is low then increases substantially with age. Seasonal migrations associated with spawning take place in a number of spawning areas in 4X5Y, the largest occurring during winter on Browns Bank. Stock structure is not well defined, but local sub-stocks are believed to exist.

Cod in 4X5Y have been fished commercially since the 1700s. Until the 1960s, the cod fishery was primarily an inshore fishery. Following extended jurisdiction to 200 miles in 1977, 4X5Y cod has been predominantly a domestic fishery. Reported cod landings since 1985 have been below 30,000t. Average landings since 1995 are below 10,000t. Annual TAC of 6,000t have been set for each fishing season since 2000/2001.

There are two dominant gear types that exploit this stock: mobile draggers and fixed gear (longline, handline and gillnets), both used by vessels less than 65 feet LOA. The groundfish fishery in 4X5Y is prosecuted throughout the year with fleets adjusting their timing for weather and fish abundance. The ITQ fleet (MG<65') adapts its fishing strategy to available quotas and is now more seasonal, its fishing pattern depending on quota availability and markets. The small vessel fixed gear fleets fish primarily in June and July with larger vessel (>65' LOA) and ITQ participation during the Autumn. The <45 ft fixed gear fleet presently has the greater share of the cod quota.

STOCK OBJECTIVES

The Council has identified long-term conservation objectives in consultation with the 4X5Y fishing industry and DFO:

1. Conservation and Rebuilding of Commercial Groundfish Stocks

a) **Ecosystem Health**. To prevent or to mitigate human disturbances of species diversity, genetic variability, ecosystem productivity, structure, and function, and marine environmental quality of target and non-target species.

b) **Rebuild.** To rebuild the spawning stock biomass.

c) **Conserve.** To identify, monitor, and avoid over-exploitation of individual spawning stock components and juvenile rearing areas within the management area.

d) **Research.** To investigate, monitor and establish strategies regarding the reproductive capacity of the stock, substock components, and interactions with other species in the ecosystem.

2. Sustainable Utilization and Relative Stability in the Fishery and Management Regime

a) **Sustainable use.** To conserve the ecosystem functions for the use of future generations.

b) **Long-term view.** To adopt a longer-term view of management linked to spawning stock biomass and other indicators associated with the health of the stock.

c) **Affirm Fluctuations.** To acknowledge that conservation decisions relate to stocks that are subject to natural fluctuations within a dynamic and complex ecosystem.

ANALYSIS

The 2003 4X5Y cod Stock Status Report indicates:

- Nominal landings and TAC declined through the 1990s and were 6,000t annually from 2000 to 2003.

- Recruitment has improved in the Bay of Fundy starting with the 1998 year-class. On the Scotian Shelf, RV survey catch at age 2 has been low since 1995, while the ITQ survey indicates recruitment in 2000-2003 is roughly double the previous 4 years.
- There has been little change in biomass in the past 5 years.
- Available data are insufficient to determine if nominal landings accurately reflect mortality from fishing.
- Length at age and condition are about average.
- As stock structure is not well defined for cod within 4X, special attention is required to avoid over-exploitation of local or sub-populations.
- In 2002, half of cod landings came from trips where cod was not the main species. Potential impacts on cod should, therefore, be considered in managing other groundfish.
- With the improved recruitment observed, biomass should gradually increase if catch does not exceed 6,000t.

Consultations for this stock were held in Yarmouth and Dartmouth, Nova Scotia, in January 2004. During consultations, harvesters reported that the 4X5Y cod is improving more than the DFO SSR suggests. Harvesters also indicated that it was possible to identify time and areas with low by-catch of cod while fishing for haddock.

The SSR indicates that the there has been little change in biomass in the past five years. Discarding, dumping, mis-reporting and non-reporting of catches appear to have been reduced in 2003, but these poor fishing practices introduced large uncertainties in the assessment. Preventing these poor fishing practices from occurring remains a challenge to effective fishery management. Stock rebuilding may not be possible until poor fishing practices are eliminated.

In 2003, the Council recommended that a system be designed to ensure that total removals did not exceed 6,000t in 2003/2004. Based on comments heard at consultations and on documented improved monitoring, control and surveillance (MCS) by DFO, the Council is satisfied that total removals during the 2003/2004 fishing season will be closer to the TAC than in previous years. The FRCC therefore does not have to recommend that the fishery be substantially reduced as implied by the 2003 advice if total fishery removals were not better controlled. **The FRCC recommends that efforts be continued and expanded to ensure that fishery removals do not exceed 6,000t for 2004/2005. The Council further recommends that observer coverage be increased to achieve better control of fishery removals.**

The FRCC notes that TACs of 6,000t since the 2000/2001 fishing season have not resulted in the expected increases in cod biomass. The Council is concerned that the gradual increase in biomass forecast in the SSR may not occur if improved control of fishery removals is not achieved. The Council notes that harvesting 6,000t from this resource under current productive conditions is a weak rebuilding strategy.

The SSR reports that fishing effort has decreased by half or more compared with the early 1990s, but there is no information in the SSR on trends in fishing mortality. The Council therefore is unable to ascertain if fishing mortality should be reduced further to promote stock increases. The FRCC requests that fishing mortality, biomass and recruitment trends be included in the SSR. If concerns remain that removals are not adequately documented, an assessment model less dependent on the accuracy of catch estimates should be used to provide estimates of fishing mortality and stock trends.

There are indications that population trends are different for cod on the Scotian Shelf and those in the Bay of Fundy. The FRCC reiterates its strong support for the ongoing DFO Science cod tagging program in order to learn more about in-season cod movement, substocks, and possible spawning locations and timing in 4X5Y. Extension of the current program to include the joint industry-DFO ITQ survey would provide wider results for future analysis.

The FRCC recommends that DFO Science, in consultation with industry, report on the tagging program in 4X5Y, on information about seasonal cod (and other groundfish) migration patterns and spawning location and dynamics as the information becomes available.

Sources

DFO Science

SSR A3- 05 (2002) Southern Scotian Shelf and Bay of Fundy Cod
NR-HQ-00-11 News Release- Fisheries and Oceans Canada
Cod on the Southern Scotian Shelf and in the Bay of Fundy (Div. 4X/5Y) 2003/050

FRCC Consultations

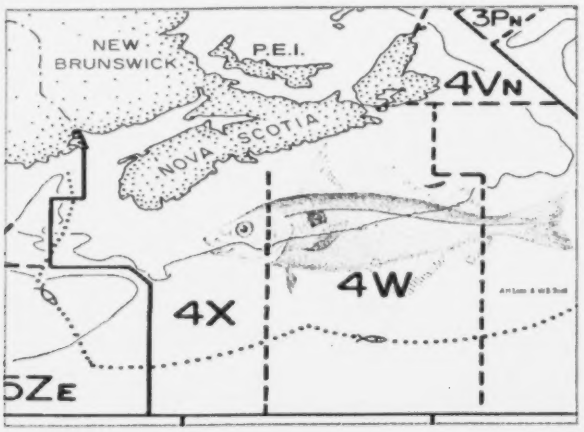
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)

Written Briefs

Scotia Fundy Inshore Fishermens Association – Evan L. Walters (2004-010-0001)
Sea Star Seafoods Ltd. – Adlai Cunningham (2004-010-00003)
Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Shelburne County Competitive Fishermen's Association – Pam Decker (2004-010-00005)
Nova Scotia Fish Packers Association – Denny Morrow (2004-010-00008)
Fixed Gear 65-100' Fleet – Christine Penney (2004-010-00011)
Ecology Action Centre – Janette Rodewald (2004-010-00013)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)

HADDOCK - 4X5Y



PERSPECTIVE

Haddock is a bottom dwelling species that feeds mainly on small invertebrates. Haddock grow rapidly at young ages reaching an average length of 41cm and average weight of 0.7kg by age 4, the age of 50% female maturity. The fecundity of females at first maturity is low then increases substantially with age. The major spawning area for the stock is on Browns Bank where peak spawning may occur between April and June. After age 3, growth rate slows with haddock reaching an average of 53cm in length by age 10.

Reported haddock landings since 1988 have been below 11,000t annually. Historically, this fishery has been dominated by mobile gear (trawlers) except during 1990-93 when the proportion of landings taken by fixed gear (longline and handline) was greater. Quotas for this stock were introduced in 1970 and the Browns Bank spawning closure has been in effect every year since that time. Currently the spawning closure is from February 1st to June 15th.

Smaller handline vessels fish primarily during the period May through September. The ITQ fleet (MG<65') adapts its fishing strategy to available quotas and is now more seasonal in fishing pattern depending on quota availability and market. The small fixed gear fleets fish primarily in June and July with more large vessel (>65' LOA) and ITQ participation during the fall period.

STOCK OBJECTIVES

The Council has made recommendations for 4X5Y haddock based on the following objectives and conservation measures for 4X5Y haddock. In consultation with the fishing industry, the Council developed a long-term plan for 4X5Y haddock with objectives that include:

1) Conservation and Rebuilding of Commercial Groundfish Stocks

a) **Ecosystem Health**. To prevent or to mitigate human disturbances of species diversity, genetic variability, ecosystem productivity, structure, and function, and marine environmental quality of target and non-target species

b) **Rebuild**. To rebuild the spawning stock biomass

c) **Conserve**. To identify, monitor, and avoid over-exploitation of individual spawning stock components and juvenile rearing areas within the management area

d) **Research**. To investigate, monitor and establish strategies regarding the reproductive capacity of the stock, substock components, and interactions with other species in the ecosystem

2) Sustainable Utilization and Relative Stability in the Fishery and Management Regime

a) **Sustainable use**. To conserve the ecosystem functions for the use of future generations

b) **Long-term view**. To adopt a longer-term view of stock management linked to spawning stock biomass levels and other indicators associated with the health of the stock

c) **Affirm Fluctuations**. To acknowledge that conservation decisions relate to stocks that are subject to natural fluctuations within a dynamic and complex eco-system

The FRCC and harvesters in 4X5Y are continuing their efforts to achieve these objectives.

ANALYSIS

There was a full assessment of this stock in 2003. The 2003 Stock Status Report indicates:

- The quota for 4X5Y haddock has remained at 8,100t for a five year period. Reported landings have been close to the quota each year. The quota in 2003 was 10,000t.

- Abundance has been increasing since the early 1990's and is presently near the high levels observed in the late 1970's.
- Size-at-age and growth have decreased since 1970, particularly for older ages.
- Exploitation rate for ages 5-7 decreased from approximately 50% in the early 1980's to below 20% (corresponds to currently used FO.1=0.25) since 1994.
- Partial recruitment has changed in recent years and fully recruited ages have changed from 5-7 to 8-10.
- The exploitation rate on older ages remained high at about 20%.
- The 1998 year-class is estimated to be the largest observed in the time series, and the 1999 year-class is also estimated to be very large; however due to the retrospective pattern these year-classes may be substantially over-estimated.
- Spawning stock biomass (ages 4+) is estimated to increase to a high in 2004 and then decrease subsequently unless further strong recruitment occurs.
- Projected yield at F0.1 in the 2004 fishing year is estimated to be 11,000t; however due to the retrospective pattern, this should be considered a maximum.
- Emphasis should be on how the potential yield from the current good recruitment is to be utilized over time.
- The catch of cod in the mixed fishery is a concern and conservation of cod should be considered in the management plan for this fishery.

Consultations were held in Yarmouth and Dartmouth, Nova Scotia, in January 2004. Fishermen from both fixed and mobile gear sectors stated that they have made significant progress in directing for haddock with minimal by-catch of cod in what was previously predominantly a mixed cod and haddock fishery. The FRCC recognizes the effort made by industry to reduce by-catches in the haddock fishery and encourages continued innovation in the harvesting of this resource in a responsible manner. Generally, harvesters requested that the TAC for 4X5Y haddock be set at 9,000t or 10,000t. No one requested a TAC of 11,000t as mentioned in the SSR. Some would rather see the TAC reduced slightly now, and hopefully not experience reductions in future years.

Improved recruitment and low exploitation in the early 1990's started stock rebuilding. Recent high recruitment and continued low exploitation have enabled the stock to build to its current healthy condition. Also, the age structure has been broadening since 1995, indicating that the current population abundance consists of several ages with above average strength. This stock is presently considered healthy and will likely fluctuate due to varying recruitment pulses in the longer term. Similar to most groundfish stocks in the Scotia Fundy region the size-at-age and growth for haddock have decreased since 1970, particularly for older ages. If the somatic growth were similar to those years when the growth and condition were good, then the recommended TAC would likely be much higher. Last year, the Council recommended that the TAC be set at 10,000t for two years, 2003/2005.

The Council recognizes that the recommended 10,000t haddock TAC combined with the recommended 6,000t TAC for cod, will continue to place harvesters in a challenging situation with respect to potential high by-catches of cod in a mixed fishery. With the projected increase in fishable biomass at >60,000t in 2004, the Council is confident that the haddock TAC can be fished without jeopardizing the cod stock. More effort will be required by harvesters to direct for haddock by targeting specific areas and times to fish, or using other innovative ideas in gear technology that will accomplish the same end. The Council recognizes that the catch of haddock is limited by the amount of cod available to the fleets. DFO will have to be diligent in the enforcement and protection of the resource in order to ensure compliance.

The FRCC recommends that for 4X5Y haddock that the TAC be maintained at 10,000t for 2004/2005.

The FRCC recommends that DFO closely monitor the fishery and ensure compliance in the mixed cod and haddock fishery.

Although there has been a marked improvement with real–time integrated monitoring, the increased use of observer coverage would improve monitoring.

Sources

DFO Science

SSR A3-07 (2002) Southern Scotian Shelf and Bay of Fundy Haddock
SSR A3-35 (2001) Updates on Selected Scotian Shelf Groundfish Stocks in 2001
Haddock on the Southern Scotian Shelf and Bay of Fundy (Div. 4X/5Y) SSR 2003/051

FRCC Consultations

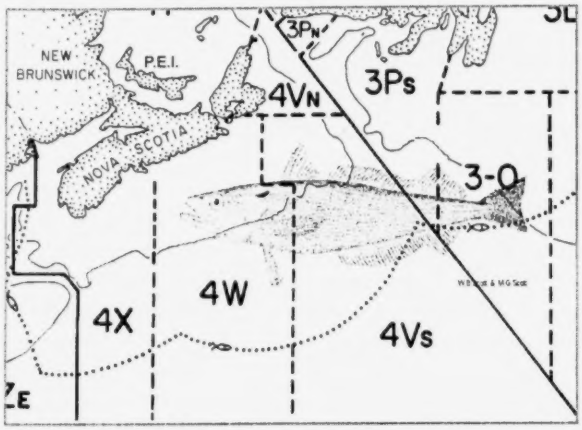
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)

Written Briefs

Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Shelburne County Competitive Fishermen's Association – Pam Decker (2004-010-00005)
Fixed Gear 65-100' Fleet – Christine Penney (2004-010-00011)
Ecology Action Centre – Janette Rodewald (2004-010-00013)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)

SILVER HAKE - 4VWX



PERSPECTIVE

Silver hake (Merluccius bilinearis) is a bottom dwelling member of the gadoid family, found from Cape Hatteras to the Grand Banks and the Gulf of St. Lawrence. A major concentration of silver hake occurs on and around the Scotian Shelf.

Scotian Shelf silver hake are generally found between 7 and 10 deg. C., in deeper water on the shelf edge and Emerald and LaHave basins. Seasonal movements occur during the summer, as silver hake feed primarily on invertebrates, with krill the predominant prey item. Older fish are piscivorous and highly cannibalistic.

Silver hake exhibit relatively rapid growth with females growing faster than males, the maximum age observed is 12 years and maturity occurs relatively early, with a majority of males maturing at age 2, and females at 3.

Prior to 1977, fishing on the Scotian Shelf was unrestricted in terms of area, mesh size and season. During this period fishing was conducted over the entire shelf, and the use of trawl mesh as small as 40mm was common. In 1977, fishing for this species was restricted to the seaward side of the Small Mesh Gear Line (SMGL), west of 60 deg. W longitude, with a minimum mesh size of 60mm (offshore). In 1994, further restrictions were introduced to minimize incidental catches of cod, haddock and pollock in the silver hake fishery. These included a repositioning of the SMGL to prevent fishing in depths less than 190m and the mandatory use of a separator grate with 40mm bar spacing in the lengthening piece of the trawl. Since 1995, the fishery has been conducted mainly by the Canadian tonnage class 3 (<65') mobile gear fleet in and around Emerald and LaHave Basins and some fishing activity has taken place on the continental slope in 2001, 2002 and 2003. The regulated mesh size for this trawl fishery is currently 55mm square.

ANALYSIS

The outlook from the last full assessment for this resource indicated that the catches should not be allowed to increase from the average. Silver hake was assessed and an SSR produced in 2003. This assessment indicates that the biomass remains very low. Condition and length-at-age remain low compared to average. Size at maturity remains below long-term averages with fish maturing at ages between 1 and 2 years. Estimates of mortality remain high. However, recruitment prospects are much improved after two weak year-classes, the 2002 year-class is well above average. The resource is widely distributed through the geographical range.

The FRCC consultations on silver hake 4VWX were held in Yarmouth, Dartmouth and Sydney in January 2004. Generally, harvesters expressed the view that the silver hake stock is not in as much difficulty as is portrayed in the SSR. They feel there is substantial uncertainty in the assessment and the variables analyzed.

An industry submission questioned the usefulness of the research vessel survey as a measure of stock size, and expressed concerns on the assumed stock structure and definition. Concerns were also identified regarding catchability of research trawl survey timing related to spawning behavior and seasonal variability of hake, availability of larger hake to the trawl survey and prey spectrum changes etc. Industry also maintains that silver hake are deep water semi-pelagic fish and note that there are very few research vessel survey sets in the deep water, hence they may not provide reliable estimates of stock size.

The survey upon which the 4VWX quota is set does not include the Gulf of Maine, however, the catches from this area are applied against the TAC. The USA conducts genetic testing that may eventually shed light on this issue of proper stock definition and structure in this area. In addition questions remain regarding how concentrations of silver hake in the shelf basins relate to those on the shelf edge.

The Council agrees that uncertainties remain regarding the assessment of this stock. In addition to these specific questions related to the assessment, it is of concern that with a massive reduction in fishing effort

from the 1970's to present and continued recruitment there has been no significant biomass growth. Mortality related to cannibalism has been suggested but there is no clear explanation. Given these concerns and potential for this stock the Council feels it would be worthwhile to conduct an in depth review on silver hake.

The FRCC recommends that DFO schedule an Intensive Fishery Evaluation or equivalent forum to improve the assessment basis for silver hake.

Harvesters report continued good or recently improved catch rates during 2003 and advised a status quo of 15,000t was appropriate. The fishery is conducted by vessels that use separator grates to avoid incidental by-catches of other groundfish species and by-catch remains very low.

Perhaps the most notable features of this stock are that recruitment is currently increasing and fish are maturing as early as age one. This species is unique in that fish mature quickly and substantial quantities of these fish are harvested within an accelerated time frame of less than two years from spawning. This allows less time for prediction, monitoring and reaction to changing stock status. Industry advised that marine environmental trends and fish distribution also change quite quickly with monthly and inter-annual variation being the norm.

Industry indicates that the abundance and the catch of small fish, especially in the basins, is high. The regulated mesh size used is 55mm square and it was considered adequate to allow escapement of young fish. However, there are reports of up to 40% of the catch composition being age one, suggesting that something may have changed related to the catchability and availability of age one fish to the current gear or the fishing methods by the fleet.

Industry feels the large number of small fish in the catch may simply reflect abundance and may be sustainable from a biological perspective, if removals are not excessive. However, the situation of exploiting large numbers of mature small fish creates uncertainty, especially over the longer term unless removals can be accurately and dependably measured.

The FRCC recommends that an investigation be conducted, with industry input as appropriate, to determine and evaluate;

- **the reason for the high catch of age one fish related to current gear;**
- **whether this situation should and/or can be corrected through appropriate actions to improve catch composition;**
- **whether present fishing effort is sustainable given the current stock structure and dynamics, and catch composition; and**
- **the assumption of survival of escaped fish.**

The FRCC recommended a TAC of 20,000t be set for 2000 through 2002 which represented the lowest TAC over the last 30 years. A two year reduced TAC of 15,000t was recommended in 2003 to reflect uncertainties related to recruitment and promote rebuilding. The Minister decided to establish a one year TAC at 15,000t.

The Council's objective is to rebuild this stock. While there are many uncertainties related to the assessment, there is a positive recruitment trend. Given these mixed signals, the FRCC feels the status quo is acceptable, however, stock status must be monitored closely due to the exploitation on young fish in the fishery.

The FRCC recommends that the TAC for 4VWX silver hake be maintained at 15,000t for 2004/2005.

Sources

DFO Science

SSR A3-35 (2002) Updates on selected Scotian Shelf groundfish stocks in 2002
Silver Hake on the Scotian Shelf (Div. 4VWX) SSR 2003/052

FRCC Consultations

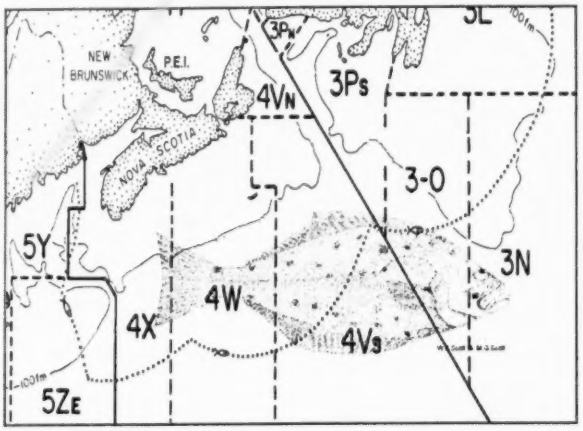
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)

Written Briefs

Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Shelburne County Competitive Fishermen's Association – Pam Decker (2004-010-00005)
Eastern Nova Scotia 4VsW Management Board (2004-010-00007)
D'Eon Fisheries Ltd – Sylvain D'Eon (2004-010-00010)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)
Ecology Action Centre – Janette Rodewald (2004-010-00013)

Atlantic Halibut - 3NOPs4VWX5Zc



Perspective

Atlantic halibut is the largest of the flatfishes ranging widely in waters of Atlantic Canada. Atlantic halibut are most abundant in the deep-water channels running between the banks and on the edge of the continental shelf. It is thought that these fish generally spawn in deeper waters in late Fall and early Winter.

This is a slow growing, long-lived species. Females grow faster than males, and reach a much larger maximum size. While 50% of females appear to achieve maturity at 115 cm, 50% of males appear to attain maturity at 75 cm.

Analysis

Atlantic halibut was not reviewed by DFO Science as part of the most recent regional assessment process and therefore there was no Stock Status Report (SSR) prepared for this stock. However, DFO Science has provided a comprehensive Fisheries Status Report which includes the recent data and trends on the fishery as well as data from the ongoing halibut longline survey. The Fisheries Status Report for the stock provided the following summary:

- FRCC recommended increases in TAC in 2000 and 2001, and 2003 resulting in a current TAC of 1,300t.
- White hake, cusk, cod, dogfish, and a range of other species, are caught as part of a suite of species in the halibut fishery. It should be emphasized that these by-catch profiles are restricted in area, time and sampling methodology, and are not applicable to the halibut fishery as a whole.
- The halibut longline survey provides the capacity to monitor the halibut population. It has now been in place for six years, is internally consistent (rankings of high, medium and low strata are consistent, fishing grounds are consistently identified, and the commercial and fixed station indices give similar trajectories), and does not suffer from the high variability observed in the RV survey series.
- The halibut longline survey indicates lower recruitment numbers in 2002 and 2003 for the stock area as a whole. Recruitment estimates for 3NOPs were relatively high in 2001 and 2002, but in 2003 have declined to the low level seen in the first three years of the halibut survey. However, survey coverage in 3NOPs, particularly 3NO, remains problematic mainly due to the costs involved in getting there and management restrictions related to cod by-catch limits.
- Halibut longline survey commercial index and fixed station estimates of biomass (cpue) show a relatively stable overall population size from 1998 – 2003. There has been a slow decline in catch rates since 2000, which is most apparent in the mid-level stratum.
- The continued operation of the longline survey to effectively monitor population status, is essential to the management of this fishery. In is essential that the longline survey consistently covers 3NOPs, which is currently seriously hindered by by-catch restrictions. Discussions with regional fisheries management are required to resolve this situation.

During the consultations held in Yarmouth, Dartmouth and Sydney, Nova Scotia in January 2004, industry observations were that Atlantic halibut abundance is stable with increases in quota and catch rates are high and widespread, with a mixture of sizes throughout its range. It was stated that vessels in the 65-100' longline fleet are experiencing high catch rates in 3NO and 3Ps. Other observations noted that the stock is in good condition and that juvenile fish are numerous; Halibut tagged in 4Vn area have been recovered in areas of the Gulf of St. Lawrence; and the observation was made that the longline survey does not cover the entire stock area, particularly fishing zones off Newfoundland (Grand Banks) where significant catches occur. Industry's view is that the TAC should be increased. Sug-

gested increases range from 150-600t for the next fishing year. There is a broad industry view that annual increases should be instituted until the TAC reaches 1900t, the long-term average catch.

Information in the fisheries status report indicates that the fixed station catch rates show an apparent slow decline that is attributable to areas of mid-level catches. This trend may be an early sign of change in the population. The halibut recruitment indices based on the number of fish <81 cm caught per standard longline set indicates a decline in 2002-2003, a similar decline is noted from the research vessel survey which has been referenced as a proxy of recruitment for halibut. In addition, there remains much uncertainty about the absolute population size and the age structure for halibut. While there is work ongoing there is no estimate of mortality rates to determine fishing effects.

During consultations it was indicated that a more cooperative industry approach to research, assessment and conservation measures for Atlantic halibut is being adopted through the creation of an Atlantic Halibut Council. The FRCC commends the cooperative efforts of the industry and supports industry efforts to cooperate with DFO Science in the continuation of the halibut longline survey that commenced in 1998. This survey provides the best available measure of the status of this resource on a continuing basis. The FRCC supports all reasonable measures to ensure the continuing integrity of the survey for the long-term. The Council emphasizes the need to extend survey coverage fully on the Grand Banks in SA3. **The FRCC recommends that the industry/DFO halibut longline survey be continued with sufficient observer coverage to ensure its ongoing integrity and steps be taken to ensure the survey extends to the area of the Grand Banks in NAFO sub-area 3.**

In three of the past four years the FRCC recommended increases in the TAC. These recommendations recognized the problems related to the DFO research vessel survey and pending the results of the longline survey, the Council acknowledged industry observations of stock abundance and decided to recommend a directional increase in the TAC by 150t for each year. No increase in TAC was recommended for 2002/2003, in part in recognition that continued year-over-year increases in the TAC may not enable a reasonably clear determination of the impact of fishing effort on the condition of the stock. The Council supports all initiatives to address the need for more science that will enable stakeholders to consider whether more significant increases in TAC are sustainable and consistent with continued rebuilding.

Unfortunately, DFO Science has not made much progress towards producing the previously requested estimates regarding absolute abundance and biomass, population structure, and harvest rates. This lack of information makes it difficult to identify the conservation basis for any specific TAC for this fishery. During 2003 the Council was advised that DFO Science was planning to conduct an Intensive Fisheries Evaluation (IFE), to date the IFE has not been scheduled and the FRCC awaits a further update on the status of Atlantic halibut. It is important to note that the IFE is an important part of a conservation framework. **Accordingly, the FRCC recommends that DFO Science complete the necessary analysis including the tagging and aging initiatives recommended previously.**

The Council notes the consensus between DFO Science and industry that a series of cautious annual increases in the TAC would be reasonable, subject to there being no negative indications from the stock. The Council notes that a stable survey index does not necessarily indicate that the stock can support repeated increases in TAC. At the same time, the Council acknowledges that neither the survey nor the current fishery includes coverage of the Grand Banks where significant halibut catches occur. Given these considerations, the Council is not prepared to recommend a multi-year plan for TAC increases, but notes that a multi-year fishery management plan should be pursued coincident with developments to enhance the survey coverage and progress on estimating the abundance and harvest rates for the stock. **The FRCC recommends that the Atlantic halibut TAC remain at 1300t for 2004/2005.**

The Council observes that approximately 1/3 of the 2003 catch of Atlantic halibut was caught in 4VW. The Council previously expressed concern with the seriously depleted condition of the 4VsW cod stock and recommended a cap of 150t for 2003/2004. It has been noted that cod by-catches have been reduced in the area and the overall by-catch is less than the 150t cap. **The FRCC commends the efforts of DFO and industry to limit cod by-catches in the area and recommends that effective measures be maintained to ensure that by-catches are kept as low as possible and that 100% dockside monitoring for all landings continues.**

Sources

DFO Science

Expert Opinion On Current Estimates of Population Status of Atlantic Halibut on the Scotian Shelf and Southern Grand Banks – April 30, 2003 (including Appendix 1)
Halibut on the Scotian Shelf and Southern Grand Banks – Overview of the Industry /DFO Longline Survey and Results to 2003 FSR 2003/01

FRCC Consultations

The FRCC held consultations on this stock in:

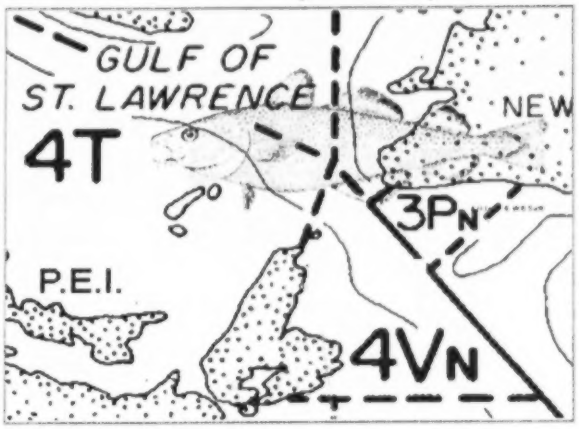
Yarmouth, NS (January 6)
Dartmouth, NS (January 7)
Sydney, NS (January 8)

Written Briefs

Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Sea Star Seafoods Ltd. – Adlai Cunningham (2004-010-00003)
Shelburne County Competitive Fishermen's Association – Pam Decker (2004-010-00005)
Eastern Nova Scotia 4VsW Management Board (2004-010-00007)
Shelburne County Quota Group – Gary Dedrick (2004-010-00009)
Fixed Gear 65-100' Fleet – Christine Penney (2004-010-00011)
North of Smokey Fishermen's Association – Osborne Burke (2004-010-00012)
Ecology Action Centre – Janette Rodewald (2004-010-00013)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)
Atlantic Halibut Council – Bruce Chapman (2004-010-00018)

Chapter 3: Updates

COD - 4VN (M-O)



UPDATE

The last stock assessment for 4Vn cod was done in 2001, followed by stock assessment advice in 2002. DFO Science prepared an Expert Opinion in 2003.

The current status of this resource is poor and abundance continues to decline in the absence of any directed fishing. Observed recruitment has not translated into increased abundance of older age groups and natural mortality is high. The sentinel program was created to monitor stock status, with removals of approximately 25t for the sentinel survey component of the program and approximately 100t for the commercial index portion. DFO Science expressed some concern on the benefits received from the commercial portion.

Consultations for 4Vn cod were held at Dartmouth and Sydney, N.S. in January 2004. The harvesters feel that the high natural mortality rate for 4Vn cod is caused by grey seals. It was noted by one harvester that the by-catch of cod in his halibut fishery was less than half that of the prior year. Harvesters also feel that the commercial index portion of the catch is not an average since the sentinel program began and they requested a higher catch limit.

Harvesters commented on the Fisheries Science Collaborative Project on seals noting the merits of this project. The project covers the area Cape North / St. Paul Island and all areas in between, up to and including the Bird Islands. There are three vessels involved and the harvesters are of the opinion that the project should be expanded to other areas next year. The main focus of this project is to study seal diet. The lack of recovery of 4Vn cod, in particular the high natural mortality and the role of seal predation, remains a concern.

The FRCC is encouraged that this collaborative work is being done and supports the proposal that it be expanded to other areas.

The Council feels that the sentinel program in 4Vn should continue for 2004/2005. While the commercial index component of the program does not provide any additional information on changes in overall stock abundance, it does provide the industry an opportunity to monitor known concentrations and migratory habits as well as assisting with the funding of the survey component. The FRCC notes the request by fishers to increase the amount of fish to be taken by the commercial index, however, the condition of this stock requires total removals be kept to an absolute minimum.

The FRCC recommends that the 4Vn sentinel program continue and that total removals should not exceed 100t for the commercial index portion of the program.

SOURCES

DFO SCIENCE

Expert Opinion on Status of 4Vn Cod (May - October) EO 2003/16
SSR-A3-02(2002) Cod in Sydney Bight (4Vn).

FRCC CONSULTATIONS

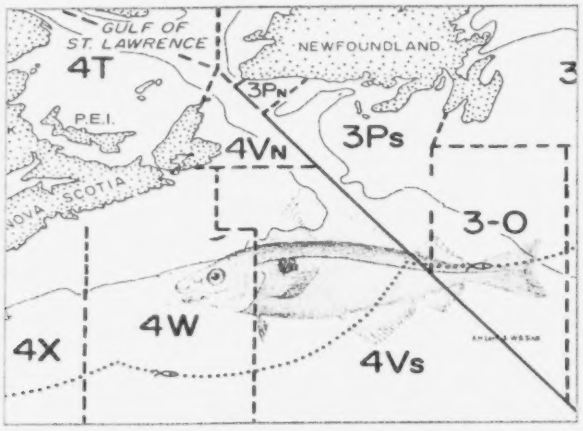
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)
Sydney, NS (January 8)

WRITTEN BRIEFS

4Vn Sentinel Fisher Association - Kevin Nash (2004-010-00006)
North of Smokey Fishermen's Association – Osborne Burke (2004-010-00012)
Ecology Action Centre – Janette Rodewald (2004-010-00013)

HADDOCK - 4TVW



UPDATE

In 2002 DFO Science produced a Stock Status Report (SSR) for 4TVW haddock. In 2003 DFO Science presented an Expert Opinion on this stock.

The 4TVW haddock fishery has been closed since 1993 and since that time the resource has undergone a recovery which is dominated by slow growing fish. Spawning Stock Biomass (SSB) has continued to grow since 1993 and the SSB (2002) is approximately at the long-term average. The slow growing haddock in 4TVW is consistent with the observation that size-at - age has decreased markedly for most species in this area. Recent recruitment is above average especially the 1999 year-class, but growth is well below that seen in the 1990's. Natural mortality has increased in 4TVW haddock as it has for other species in the area.

Consultations were held in Yarmouth, Dartmouth and Sydney in January 2004. The question of high natural mortality was emphasized a number of times during consultation meetings with industry. Industry has asked DFO to conduct an experimental fishery on 4TVW haddock to address the issues of capture of small fish and co-occurrence of cod. DFO Science point out that an analysis of cod and haddock distributions has shown that there are some areas that would be better than others for experimental fishing. They also make the case that there are implications about the catch of other species and that this would be exacerbated if the legal minimum size were reduced. In addition, DFO Science feel that while separator trawls may mitigate the impact on cod, other species may need protection. While there is significant production of haddock to allow a small experimental fishery in the order of a few hundred tons, it must be carefully designed and monitored. Issues of small fish and the perilous condition of the 4VsW cod resource must be addressed in any experimental haddock fishery.

Recommendations for this stock by the FRCC are similar to those developed for 2003/2004.

Given the potential conservation problems for 4VsW cod, the council recommends that there be no directed fishery for haddock in 4TVW in 2004/2005, subject to initiatives outlined below.

The FRCC recommends that by-catches of haddock in 4TVW should not exceed those required for the normal conduct of fisheries directed towards other species, subject to initiatives below.

The most current SSB estimate of 50,000t for 4TVW haddock is one of the highest observed since 1970 with higher values in 1985 to 1987. Currently, the SSB is comprised in large part of (mature) fish smaller than the 43 cm minimum size; given current growth and mortality, few of these fish are expected to grow above 43 cm. DFO Science believes that there is a high probability that the SSB will decrease to what it considers being possible conservation limits within a few years if natural mortality remains high, if growth does not improve and if recruitment is average or lower.

The FRCC is concerned about poor growth and increasing natural mortality for haddock on the eastern Scotian Shelf. These problems maybe signs of ecosystem stress and deserve scientific study.

The FRCC believes that a limited index fishery would enable industry to gain a perspective on the abundance, size composition, distribution, and availability of haddock and other species at different times of the year. As in other index fisheries, the knowledge thus gained by the industry helps the FRCC obtain a better perspective of the status of the resources in the area. The FRCC is encouraged to note that a test fishing project has been approved for 2003/2004.

The FRCC recommends that the working group created by DFO Fisheries Management including DFO Science and industry that operated in 2003 continue its work in 2004:

- **to design and implement test fishing projects (with appropriate observer coverage), in order to evaluate the ability of industry sectors to minimize cod by-catch while**

directing towards commercial size haddock, and to consider other matters as the working group may identify.

A large closed area covering much of the Emerald and Western Banks (i.e. the haddock Box) is a significant management feature of this stock and its habitat. This closed area was implemented in 1993 to encompass areas considered to be major juvenile haddock zones. While the boundary of the area has been debated in relation to its effectiveness as a juvenile haddock production measure, it remains a significant 'no-take zone' that protects both juvenile and adult haddock.

DFO and industry studies suggest that the higher concentration of small haddock do not correspond to the current boundaries of the closed area (haddock box). **The Council recommends that the boundaries of the area closed to fishing to protect juvenile haddock be reviewed to ensure it meets the conservation objective for which it was initiated.**

Sources

DFO Science

SSR A3-35 (2001) Eastern Scotian Shelf Haddock (Div. 4TVW)

CSAS Research Document 2001/100: Assessment of the Status of Div. 4TVW Haddock in 2000

Biological information relevant to the management of 4TVW haddock. DFO CSAS Research Document 2002/ 102

Expert Opinion of 4TVW Haddock 2003/19

FRCC Consultations

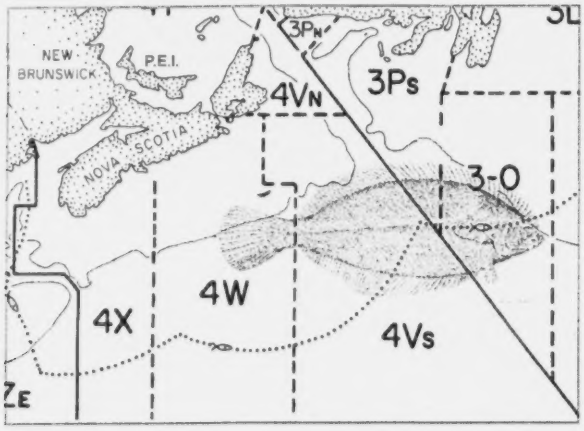
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)

Written Briefs

Eastern Nova Scotia 4VsW Management Board (2004-010-00007)
Ecology Action Centre – Janette Rodewald (2004-010-00013)

FLATFISHES - 4VW



UPDATE

In 2002 DFO Science produced a separate Stock Status Report (SSR) for American plaice and yellowtail flounder on the Eastern Scotian Shelf (4VW). For 2003 DFO Science presented an Expert Opinion for both species combined.

American Plaice and Yellowtail Flounder-4VW

Both species have been declining since the mid-1970's and their numbers are currently very low. Yellowtail flounder over 30 cm are not present in sufficient numbers to warrant a fishery and both species seem to be maturing at a small size. It is probable that the increase in small plaice (< = 30 cm) is due to reductions in growth rather than increased recruitment. DFO Science is constrained in their assessment of these species as flatfish are not separated by species when landed.

Consultations took place with industry (harvesters and processors) in Dartmouth and Sydney, N.S. in January 2004. One representative of the harvesters group stated that in 4VW there should not be any problem in separating flatfish by species at sea, as it is being done in some areas now. Other than the problem of separating flatfish in the catch there was little discussion on flatfish at the consultation meetings.

Witch Flounder - 4VWX

The last Stock Status Report on witch was prepared in 1997. It was followed by an update in 2002 and in 2003 DFO Science presented an Expert Opinion. It should be noted that the scientific assessments for witch cover the entire area of 4VWX, whereas the American plaice and yellowtail flounder assessments are presented separately in areas 4VW and 4X

Witch flounder biomass has improved slowly since 1996 but remains below the long-term mean. This stock is dominated by small fish (<35 cm) since the mid 90's. In recent years mean fish length has declined in most groundfish species and thus it is difficult to determine whether the increase in the number of small fish is due to reductions in growth, increased recruitment or both. Since 2000 the recruitment has been poor relative to that of the mid 90's. While the catch of 4X witch has been relatively stable since 1977, the catch of 4VW witch has declined significantly since the mid to late 1980's, remaining relatively stable at lower levels since about 1995.

ANALYSIS

The FRCC held consultations with industry (harvesters and processors) in Yarmouth, Dartmouth and Sydney N.S. in January 2004. Other than a comment from a harvester representative that flatfish in his area (northern Cape Breton) are being separated by species upon landing, there was little discussion on witch flounder.

In recent years the amount of witch landed annually in area 4VW was approximately 290t. The amount of American plaice and yellowtail flounder landed annually in area 4VW in recent year's averages approximately 789t with a range of 969t in 2000 to 696t in 2003.

In 2003 the FRCC recommended that a working group process led by Fishery Management and involving Industry and Fishery Science be initiated to consider and report, by September 2003, on various matters including:

- Effectiveness of the RV survey and other potential instruments/techniques as an indicator of abundance for larger-size American plaice throughout the Scotian Shelf.
- Productivity factors (environmental and biological) affecting the conservation and rebuilding of American plaice and yellowtail stocks in 4VW, with associated harvest yields that may be expected to be realized in the short-to-medium term.
- Longer-term indicators and associated reference points, and their relationship to harvest decisions.

- Longer-term approach to targeting conservation measures towards individual species.
- Other issues that the working group may deem appropriate.

The FRCC is concerned about the status of these flatfish stocks and further decline may result in the cessation of a directed fishery.

The FRCC recommends that the TAC for 4VW American plaice, yellowtail and witch flounder (flatfish) be set at 1,000t for 2004/2005.

DFO Science has stated that it is difficult to ensure the conservation of any one of the flatfish species without separating them for the purpose of collecting reliable catch statistics.

After discussion with Fisheries Management, the Council agrees that separate TAC's for each species may not result in improved conservation. The FRCC, however, believes that it is necessary to have information on the total removals by species.

The FRCC recommends that DFO require, as a condition of license, that 100% of the 4VW flatfish be recorded by species commencing in 2004/2005.

Sources

DFO Science

SSR A3-19 (1997) Witch Flounder in Division 4VWX
SSR A3-34 (2000) American Plaice and Yellowtail Flounder on the Eastern Scotian Shelf (Div. 4VW)
SSR A3-35 (2001) Updates on selected Scotian Shelf groundfish stocks in 2001
SSR A3-35 (2002) Updates on selected Scotian Shelf groundfish stocks in 2002
SSR A3-34 (2002) American Plaice and Yellowtail Flounder on the Eastern Scotian Shelf (Div. 4VW)
Expert Opinion on the Status of 4VW American Plaice and Yellowtail Flounder EO 2003/24
Expert Opinion on the Status of 4VWX Witch Flounder EO 2003/23

FRCC Consultations

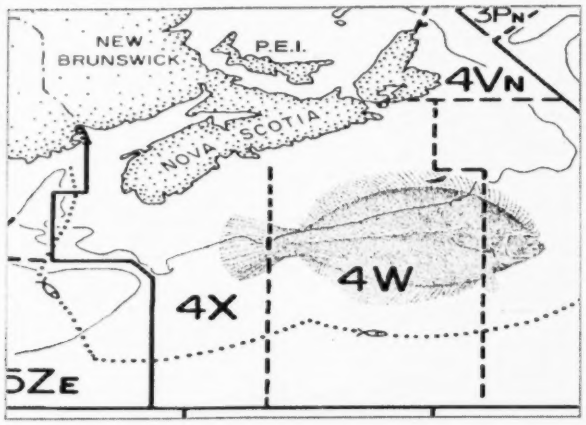
The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)
Sydney, NS (January 8)

Written Briefs

Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Ecology Action Centre – Janette Rodewald (2004-010-00013)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)

FLATFISHES - 4X5Y



UPDATE

American plaice, yellowtail, winter and witch flounder (flatfish) are part of a combined flounder TAC in areas 4X5Y. The most recent Stock Status Report (SSR) for American plaice, yellowtail and Winter flounder was conducted by DFO Science in 1997. The most recent stock assessment advice was done in 2002 and for 2003 DFO Science presented an Expert Opinion.

American Plaice

The state of this stock is not good and continues to worsen. There has been a gradual decline in the abundance of large fish (> 30 cm) with 2003 being the lowest in the time series. A general decline of small fish abundance since 1994 is also a concern.

Yellowtail Flounder

Stock status has improved and since 1985 the abundance of both large and small fish has generally increased. Distribution, however, has contracted since 1970 for this species.

Witch Flounder-4VWX

The last Stock Status Report on witch was prepared in 1997. It was followed by an update in 2002 and in 2003 DFO Science presented an Expert Opinion. It should be noted that the scientific assessments for witch cover the entire area of 4VWX, whereas the American plaice, yellowtail and winter flounder assessments are presented separately in areas 4VW and 4X5Y.

Witch flounder biomass has improved slowly since 1996 but remains below the long-term mean. This stock is dominated by small fish (<35 cm) since the mid 90's. In recent years mean fish length has declined in most groundfish species and thus it is difficult to determine whether the increase in the number of small fish is due to reductions in growth, increased recruitment or both. Since 2000 the recruitment has been poor relative to that of the mid 90's. While the catch of 4X witch has been relatively stable since 1977, the catch of 4VW witch has declined significantly since the mid to late 1980's, remaining relatively stable at lower levels since about 1995.

The Council notes that approximately 350t of witch flounder has been the approximate annual catch in 4X in recent years.

Winter Flounder

This stock has been relatively stable since the early 90's. Both large and small fish have increased in abundance over the 1970-1990 periods and abundance has remained stable since then. As well, a consistent increase in the area occupied by this species is evident.

ANALYSIS

Consultations took place in Yarmouth and Dartmouth N.S. in January 2004 and the general feeling of industry (harvesters and processors) is to leave the TAC at its current level. Harvesters have indicated that sorting at sea is difficult due to the numbers of pens available and the variety of species landed.

The FRCC is concerned that there are no estimates of the catch by species for 2003. Last year the FRCC expressed the same concern and in the absence of catch estimates felt that unless the American plaice shows clear signs of improvement a reduction in the TAC could be considered for this year. As reported by Science in 2003, the American plaice stock status is deteriorating. DFO Science made it clear that they are hampered in their efforts to ensure conservation while the flatfish TAC comes under a general TAC. They also note that the problem is exacerbated by not receiving reliable statistics on landings of flatfish separated by species and that initiation of ITQ logs and dockside monitoring of landings has had limited success in separating catch of individual species.

After discussion with Fisheries Management, the council agrees that separate TAC's for each species may not result in improved conservation. The FRCC, however, believes that it is necessary to have information on the total removals by species.

The FRCC recommends that DFO require that 100% of catches in the 4X5Y flatfish fishery be recorded by species in the fishing year 2004/2005.

The FRCC further recommends that the TAC for 2004/2005 for 4X5Y American plaice, yellowtail, winter and witch flounder (flatfish) be set at 2,000t.

Sources

DFO Science

SSR A3-21 (1997) Southwest Nova Winter Flounder, American Plaice & Yellowtail Flounder
SSR A3-35 (2002) Updates on selected Scotian Shelf groundfish stocks in 2002
Expert Opinion on the Status of 4VWX Witch Flounder EO 2003/23
Expert Opinion on the Status of 4X American Plaice, Yellowtail Flounder and Winter Flounder EO 2003/25

FRCC Consultations

The FRCC held consultations on this stock in:

Yarmouth, NS (January 6)
Dartmouth, NS (January 7)

Written Briefs

Inshore Fisheries Ltd. – Claude d'Entremont (2004-010-00002)
Scotia Fundy Mobile Gear Fishermen's Association – Brian Giroux (2004-010-00014)
Ecology Action Centre – Janette Rodewald (2004-010-00013)

APPENDICES

FRCC Terms of Reference

1. Introduction

The Government of Canada is committed to a more comprehensive approach to the conservation and management of our fisheries resource. This approach demands a better understanding of complex fisheries ecosystems - the interaction of fish with other species, predator-prey relationships, and also changes in the marine environment like ocean currents, water temperatures and salinity.

The Government of Canada is also committed to a more effective role in decision-making for those with practical experience and knowledge in the fishery.

The Minister of Fisheries and Oceans has established the Fisheries Resource Conservation Council (FRCC) as a partnership between government, the scientific community and the direct stakeholders in the fishery. Its mission is to contribute to the management of the Atlantic fisheries on a 'sustainable' basis by ensuring that stock assessments are conducted in a multi-disciplined and integrated fashion and that appropriate methodologies and approaches are employed; by reviewing these assessments together with other relevant information and recommending to the Minister total allowable catches (TACs) and other conservation measures, including some idea of the level of risk and uncertainty associated with these recommendations; and by advising on the appropriate priorities for science.

2. Definition of Conservation

Fisheries conservation is that aspect of the management of the fisheries resource which ensures that its use is sustainable and which safeguards its ecological processes and genetic diversity for the maintenance of the resource. Fisheries conservation ensures that the fullest sustainable advantage is derived from the resource and that the resource base is maintained.

3. Council Objectives

3.1 To help the government achieve its conservation, economic and social objectives for the fishery.The conservation objectives include, but are not restricted to:

3.1.1 rebuilding stocks to their 'optimum' levels and thereafter maintaining them at or near these levels, subject to natural fluctuations, and with 'sufficient' spawning biomass to allow a continuing strong production of young fish; and,

3.1.2 managing the pattern of fishing over the sizes and ages present in fish stocks and catching fish of optimal size.

3.2 To develop a more profound understanding of fish-producing ecosystems including the inter-relationships between species and the effects of changes in the marine environment on stocks.

3.3 To review scientific research, resource assessments and conservation proposals, including, where appropriate, through a process of public hearings.

3.4 To ensure that the operational and economic realities of the fishery, in addition to scientific stock assessments, are taken into account in recommending measures to achieve the conservation objectives.

3.5 To better integrate scientific expertise with the knowledge and experience of all sectors of the industry and thus develop a strong working partnership.

3.6 To provide a mechanism for public and industry advice and review of stock assessment information.

3.7 To make public recommendations to the Minister.

4. Mandate and Scope

4.1 The Fisheries Resource Conservation Council will address these objectives by bringing together industry, DFO science and fisheries management, and external scientific and economic expertise in one body.

4.2 The Council will:

4.2.1 advise the Minister on research and assessment priorities;

4.2.2 review DFO data and advise on methodologies;

4.2.3 consider conservation measures that may be required to protect fish stocks;

4.2.4 review stock assessment information and conservation proposals, including through public hearings, where appropriate; and,

4.2.5 make written public recommendations to the Minister on TACs and other conservation measures.

4.3 The Council may recommend any measures considered necessary and appropriate for conservation purposes such as TACs, closure of areas to fishing during specific periods, approaches to avoid catching sub-optimal sized fish or unwanted species, and restrictions on the characteristics or use of fishing gears.

4.4 The Council's scope includes Canadian fish stocks of the Atlantic and Eastern Arctic Oceans. In the first instance, the Council will address groundfish, and then subsequently take on responsibility for pelagic and shellfish species.

4.5 The Council may also advise the Minister on Canada's position with respect to straddling and transboundary stocks under the jurisdiction of international bodies such as the Northwest Atlantic Fisheries Organization (NAFO).

5. Size, Structure and Make-Up

5.1 The Council will consist of not more than 14 members with an appropriate balance between 'science' and 'industry'.

5.2 Members are chosen on merit and standing in the community, and not as representatives of organizations, areas or interests.

5.3 'Science' members, are drawn from government departments, universities or international posts, and are of an appropriate mix of disciplines, including fisheries management and economics.

5.4 'Industry' members are knowledgeable of fishing and the fishing industry and understand the operational and economic impacts of conservation decisions.

5.5 All members of the Council are appointed by the Minister.

5.6 All members, including the Chairperson, are appointed for a three year term; terms can be renewed.

5.7 Members appointed from DFO serve 'ex officio'.

5.8 Members have to disclose any interest in the Atlantic or Eastern Arctic fishery and take appropriate measures so as to avoid potential or real conflict of interest situations during the term of appointment.

5.9 The four Atlantic Provinces, Quebec and Nunavut may each nominate one delegate to the Council. These delegates have access to the Council's information, and may participate fully in meetings, but will not be asked to officially endorse the formal recommendations to the Minister.

5.10 The Council is supported by a small Secretariat, to be located in Ottawa. The Secretariat will:

5.10.1 provide administrative support for the functioning of the Council;

5.10.2 provide a technical science and fisheries management support;

5.10.3 organize Council meetings;

5.10.4 record decisions of the Council;

5.10.5 undertake a professional communications function for the Council, providing a central point for communications to and from the Council; and

5.10.6 undertake such other matters as from time to time might be appropriate.

5.11 The Chairman may appoint an Executive Committee, consisting of the Chairman, Vice-Chairman, and three other Members.

5.12 In addition, the Chairman may, from time to time, strike an 'ad hoc' committee to deal with a specific issue.

6. Activities:

6.1 Reviews appropriate DFO science research programs and recommends priorities, objectives and resource requirements.

6.2 Considers scientific information - including biology, and physical and chemical oceanography, taking into account fisheries management, fishing practices, economics and enforcement information.

6.3 Conducts public hearings wherein scientific information is presented and/or proposed conservation measures/options are reviewed and discussed.

6.4 Recommends TACs and other conservation measures.

6.5 Prepares a comprehensive, long-term plan and a work plan for the Council which are reviewed annually at a workshop with international scientists and appropriate industry representatives.

6.6 Ensures an open and effective exchange of information with the fishing industry and contributes to a better public understanding of the conservation and management of Canada's fisheries resource.

FRCC MEMBERSHIP:

Members:

Jean Guy d'Entremont, Chairman
Guy Cormier
Donald Delaney
Brad de Young
Gabe Gregory
Douglas Johnston
Jean-Jacques Maguire
John Pope

Provincial Delegates:

Carey Bonnell, Nunavut
Mario Gaudet, New Brunswick
David MacEwen, Prince Edward Island
Pierre Bédard, Québec
Tom Dooley, Newfoundland and Labrador
Clary Reardon, Nova Scotia

Ex Officio:

Gilles Belzile
Barry Rashotte
David Gillis

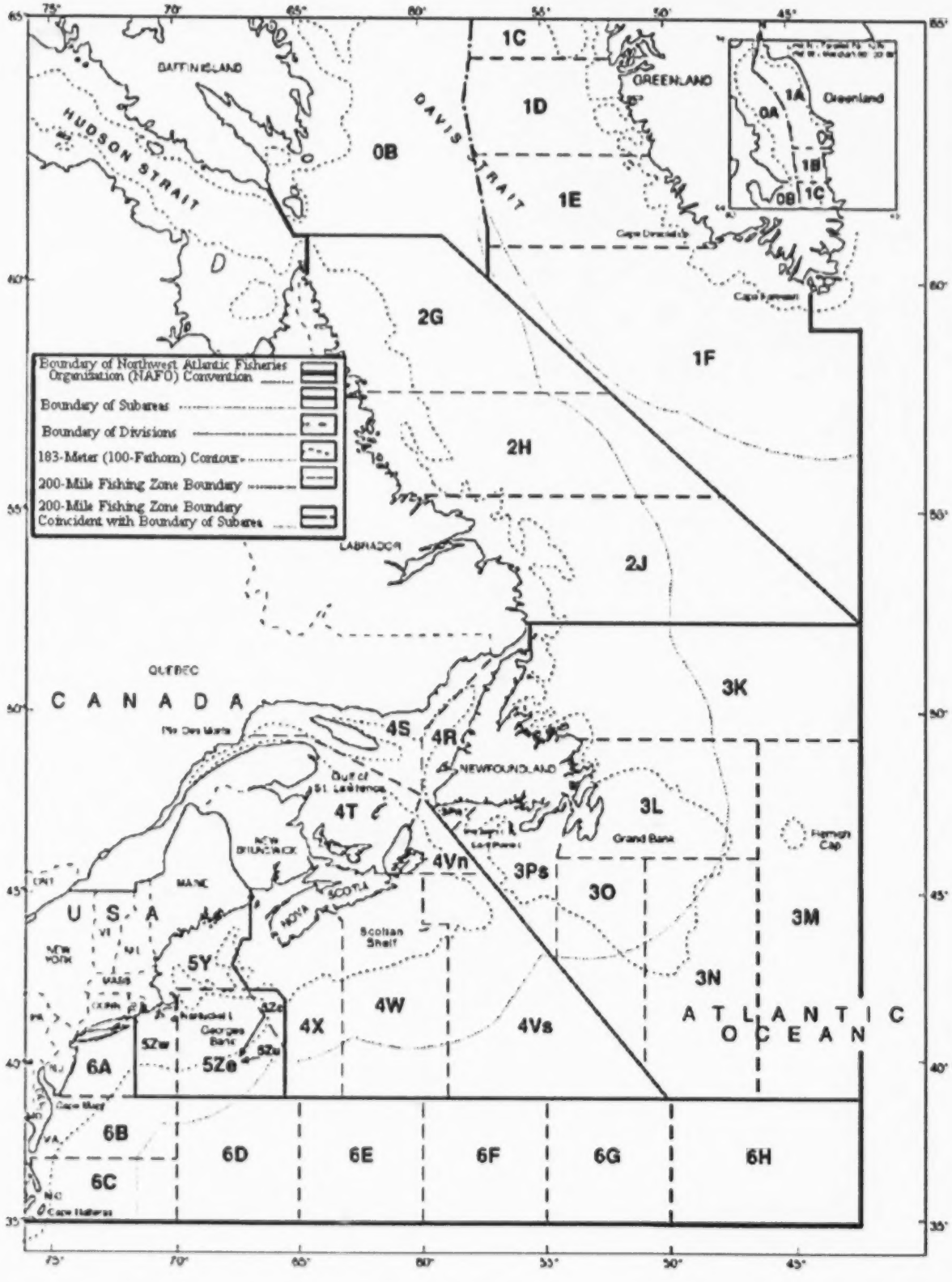
Secretariat:

Arthur Willett, Executive Director
Tracey Sheehan
Helena Da Costa
Debra Côté

ACRONYMS

COSEWIC:	Committee on the Status of Endangered Wildlife in Canada
CPUE:	Catch per unit of effort
DFO:	Department of Fisheries and Oceans
FRCC:	Fisheries Resource Conservation Council
GEAC:	Groundfish Enterprise Allocation Council
IFMP:	Integrated Fisheries Management Plan
ITQ:	Individual Transferable Quotas
IVQ:	Individual Vessel Quotas
LOA:	Length Over All
MPA:	Marine Protected Area
NAFO:	Northwest Atlantic Fisheries Organization
PA:	Precautionary Approach
RAP:	Regional Advisory Process
RV:	Research Vessel
SARA:	Species At Risk Act
SSB:	Spawning Stock Biomass
SSR:	Stock Status Report
TAC:	Total Allowable Catch
TAGS:	The Atlantic Groundfish Strategy
VPA:	Virtual Population Analysis
ZAP:	Zonal Assessment Process

200 Mile Fishing Zone and NAFO Fishing Boundaries



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